

Application No.: 09/822,043

Docket No. 00-3008

REMARKS

The following remarks are intended to be fully responsive to the Office Action having a mailing date of June 14, 2005 wherein claims 1-31 have been rejected and are currently pending. As noted above, none of the claims have been amended. Reconsideration of the claims in light of the comments below is respectfully requested.

Claim Rejections Under 35 U.S.C. § 102**Rejections Using *van Tetering et al.***

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No.: 5,343,463 to *van Tetering et al.* (*Tetering*).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). See M.P.E.P. § 2131. "To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03.

For at least the following reasons, applicant respectfully traverses.

Claim 1 recites a method for determining the subjective quality of a packetized media data stream.

Paragraphs [0003], [0004] and part of [0005] of Applicant's specification are reproduced below to provide a description of the problem associated with packet switching networks that Applicant seeks to solve.

[0003] When a packetized real-time data stream is transmitted across a packet-switching network, the packet stream may be corrupted by a number of network impairments. Examples of network impairments include packet-discard at routers due to packet bit errors, packet-dropping at interface buffers due to traffic congestion, packet-duplication, packet-delay in time

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beyond its hard or soft real-time deadline at its destination, packet-misrouting, and loss of packet sequence. These impairments generally degrade the quality of the media signal that is eventually received at the destination.

[0004] Due to network impairments that may be encountered in the transmission of real-time media over a packet-switching network, it is important to be able to measure and monitor the quality-of-service (QoS) that is being provided by the network. Typical network QoS measures include, for example, end-to-end packet delay, end-to-end packet delay jitter, packet corruption, and packet loss. To monitor such network QoS measures, one can deploy commercially available monitoring systems.

[0005] Although measurement and monitoring of network QoS provides valuable information regarding the ability of a network to properly support transmission of real-time media signals, such measures do not directly reflect the media signal subjective quality that is actually perceived by an end user. This is the case since subjective quality of a real-time media signal, as perceived by the end-user, is difficult to quantify in terms of the network QoS measures. To deal with this general problem, objective methods have been developed for estimating subjective quality of media signals.

Tetering is subject to the exactly the same infirmities as discussed in the Background. In contrast to the claimed invention, *Tetering* discloses a method for objectively measuring the performance characteristics of at least one communication path of a telecommunication packet switching network by transmitting test packets through the network (Col. 3, lns. 6-10). *Tetering* discloses examples of performance characteristics as being the bit error rate, the number of packets lost and/or inserted, and delay jitter (col. 2, lns. 58-54 followed by col. 1, lns. 21-23). As expressly discussed in both *Tetering* and the Background, it is known to those skilled in the art that performance characteristics such as bit error rate, packet loss, and delay jitter are measured to evaluate the objective quality of a network path rather than the subjective quality of a packetized data stream. *Tetering* does not provide any disclosure relative to a method for determining the subjective quality of a packetized media stream as recited in claim 1.

Further, claim 1 recites, among other things, "...replacing the content of the data portion of said copied packets with a packetized known test signal...". *Tetering* does not

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disclose replacing the data portion of copied packets, which comprise the pseudo media stream recited in claim 1, with a known test signal. In direct contrast, *Tetering* discloses replacing the data portion of live test packets and proposes to keep the live traffic active by making a copy of the live packets prior to translating them into test packets and to transmit these copies to the second subscriber location via another communication path through the switching network (col. 1, ln. 64- col. 2, ln. 2). Hence, the data portion of the copied packets disclosed in *Tetering* remained unaltered as opposed to the data portion of the copied packets recited in claim 1. For at least the foregoing reasons, claim 1, as well as claim 2, are patentable. Accordingly, Applicant respectfully requests that these claims be passed to issue.

Claim Rejections Under 35 U.S.C. § 103

Rejections Using *van Tetering et al.* in view of *Schuster et al.*

Claims 2-4, 9-16, 18-26, and 28-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over *van Tetering* in view of U.S. Patent No.: 6,360,271 to *Schuster et al.* (*Schuster*). Applicant respectfully traverses. Of the claims rejected, claims 3, 9, 14, 16, and 20 are independent claims. Claim 2 depends from claim 1, discussed above, and is patentable for at least the same reasons as discussed above with respect to claim 1.

Schuster teaches a method and apparatus for improved buffering, billing and/or routing of real-time media signals. Provided with synchronized clock signals, it is possible for the apparatus to make substantially accurate and appropriate measurements and adjustments in a transmission system. Exemplary adjustments include changing the jitter buffer size at the receiving end, and changing the routing for a given real-time media stream (col. 5, lns. 16-26). Applicant submits that *Schuster* does nothing to cure the deficiencies of *Tetering*.

Claim 3 recites a method for determining the subjective quality of a packetized data stream that includes, among other things, the steps of, “*copying a portion of said packetized data stream to obtain copied packets; ...; emptying data content of the data portion of each copied packet;*”, and, “*loading a known test signal into each emptied packet; ...*”. Independent claim 9 recites a system for measuring subjective quality of a real-time packetized media stream in a packet-switching network that includes, amongst other things, “*means for copying a portion*

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of said media stream from said packet-switching network; means for emptying a payload portion of selected packets from said copied media stream portion, resulting in empty payload portions of the selected packets; means for reloading the empty payload portions of the selected packets with a known media signal to produce a pseudo-media stream; ...". Independent claim 14 recites an apparatus for measuring subjective quality of information contained in a packetized data stream including, amongst other things, "*a first device that copies a portion of said packetized data stream;*" and "*a second device that substitutes a known test signal for the information contained in the copied portion of said packetized data stream to produce a pseudo-media stream; ...".* Independent claim 20 includes limitations similar to the foregoing limitations recited in claim 14. Independent claim 16 recites an apparatus for measuring subjective quality of the information contained in a single packetized data stream included in a multi-source packetized data stream which includes, amongst other things, the limitations of, "*a first device for copying a portion of said multi-source packetized data stream;*" and "*a third device for replacing the information content of each copied packet with a known signal to create a pseudo-media stream; ...".*

Neither *Tetering* nor *Schuster*, either standing alone or in combination, teach a method or apparatus for determining the subjective quality of a packetized data stream as recited in the pending claims. Additionally, neither reference discloses or teaches replacing or substituting the data portion of a copied packet with a known test signal as recited in the pending claims. Further, *Schuster* does not disclose "time stamping each packet included within said packetized data stream as it is copied" as asserted by the Examiner on pg. 3, para. 4 of the Office Action but rather discloses time stamping a real-time media signal before it is transmitted over a packet switched network. In fact, *Schuster* does not provide any disclosure of copying a portion of a packetized data stream as according to the pending claims. For at least these reasons, the pending claims are patentable in view of the cited references and it is respectfully requested that the claims be passed to issue.

Further, Applicant submits that notwithstanding the foregoing reasons for patentability with respect to the independent claims, the dependent claims are independently patentable. For example, claim 25 recites a method for determining the subjective quality of a packetized data stream that includes, among other things, the step of, "determining the subjective

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quality of the pseudo-media stream includes inputting the pseudo-media stream into a signal comparator with the packetized known test signal". Neither of the cited references discloses such a limitation and therefore claim 25 is patentable in view thereof.

Rejections Using *van Tetering et al.* in view of *Schuster et al* and *Steagall et al.*

Claims 5-8, 17, and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Tetering* and *Schuster* and in further view of U.S. Patent No.: 5,127,001 to *Steagall et al.* (*Steagall*). Applicant respectfully traverses. Claim 8 is an independent claim. The remaining claims are dependent claims.

Among other things independent claim 8 recites a method for determining subjective quality of a multi-media-source packetized data stream of packets and includes, amongst other things, the limitations of, "*copying a portion of said multi-media-source packetized data stream to obtain copied packets;*" and "*replacing said data content of each copied packet in said selected media stream with a packetized known test signal while maintaining the sequence of said copied packets to produce a pseudo-media stream; ...*".

Steagall teaches a conference call arrangement for distributed networks that simplifies the summing of voice packet signals by establishing a time base corresponding to the approximate time interval of data in a voice packet to simplify summing of a single voice packet from each of the other stations connected to the conference. The packets are summed for each time based interval to avoid the need for synchronous operation or realignment of the voice packets from each station connected to the conference call, and to reduce the complexity of echo suppression at each local station. (Column 3, line 58-column 4, line 1.) Applicant submits that *Steagall* does not cure the deficiencies of *Tetering* and *Schuster*.

The foregoing remarks as applied to the combination of *Tetering* and *Schuster* are applicable here and are hereby reiterated in view of this rejection. *Tetering* discloses a method for measuring the performance characteristics of at least one communication path of a telecommunication packet switching network by transmitting test packets through the network. *Schuster* teaches a method and apparatus for improved buffering, billing and/or routing of real-time media signals. *Steagall* teaches a conference call arrangement for distributed networks that

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simplifies the summing of voice packet signals. Applicant submits that there is no motivation provided in either of the cited references to combine their teachings and, even if there were motivation to do so, combining the teachings of the references does not suggest anything about methods and apparatuses for determining the subjective quality of a packetized data stream as according to the pending claims.

Further, it is asserted on pg. 11, second paragraph of the Office Action that *Steagall* discloses "separating said copied packets according to their respective media sources to obtain a separated multi-media stream (col. 8, lines 60-62)." Applicant respectfully traverses.

In contrast to separating copied packets according to their respective media sources, *Steagall* discloses utilizing a state machine that stores the number and identities of conference call members and that controls a packet sorter to distribute incoming voice packets in accordance with the source identification code contained in each voice packet (col. 8, lns. 60-62). The incoming voice packets disclosed by *Steagall* are understood to comprise live data stream packets rather than copied packets. Limitations can not be read into the cited references in view of what is disclosed and claimed in the application. The Federal Circuit noted that 'the invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.' Interconnect Planning Corp. v. Feil, 774 F.2d 1132 (Fed. Cir. 1985). Dependent claims 5-7 and 17 recite limitations similar to those recited in claim 8 relative to separating copied packets according to their respective media sources. Thus, they are also patentably distinct over the prior art of record. Claim 27 depends directly from claim 8 and is at least patentable by virtue of its relationship to the independent claim. *Steagall* does nothing to cure the deficiencies of *Tetering* and *Schuster*. Accordingly, Applicant respectfully requests that the rejections be withdrawn and the pending claims passed to issue.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 07-2347, under Order No. 00-3008 from which the undersigned is authorized to draw.

Dated: September 14, 2005

Respectfully submitted,

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